Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Improving Public Safety Communications	)	
in the 800 MHz Band	)	
	)	WT Docket No. 02-55
Consolidating the 900 MHz	)	
Industrial/Land Transportation and	)	
Business Pool Channels	)	

To: The Commission

COMMENTS OF
NEC AMERICA, INC.

NEC America, Inc. ("NEC") 1/ hereby submits comments in response to the Notice of Proposed Rulemaking (the "NPRM") released by the Federal Communications Commission (the "FCC" or the "Commission") on March 15, 2002 in the above-captioned proceeding. In the NPRM, the Commission requested comment on the suitability of using the 1910 – 1930 MHz band as replacement spectrum for cellular-type SMR licensees relocating from the 800 MHz land mobile band. The Commission also asked whether existing unlicensed PCS ("UPCS") operations in this band could continue, assuming such a relocation of SMR licensees.

1/ NEC develops, manufactures and markets a complete line of advanced communications products and software for public and private networks, including Private Branch Exchange ("PBX") systems and key telephone systems that incorporate an integrated wireless component using UPCS spectrum.

NEC recently filed comments and reply comments addressing nearly identical issues in the Commission's on-going proceeding relating to the allocation of spectrum for advanced wireless services (the "3G Proceeding"). 2/ Because of the similarity of the issues raised, NEC incorporates those comments by reference and only briefly reiterates its major points below. 3/

I. UPCS Has Been Extremely Successful in View of Its Status as a Nascent Service, Serving an Especially Important Public Safety Function

As noted extensively in NEC's 3G Proceeding comments and reply comments, the UPCS industry has grown at an impressive clip, especially since 1998 when a workable cost sharing formula was finally agreed upon for clearing the incumbent fixed microwave users from the band. In 2000, the number of users grew 31 percent, which compares favorably to the 27 percent growth in CMRS during the same period. 4/ Industry-wide reports indicate that over one-quarter million handsets are already in use. 5/ For fourth quarter 2001, the UPCS product category

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2/ *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Services*, ET Docket No. 00-258, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 16043, 16047-48 (2001).

3/ NEC filed initial comments in the 3G Proceeding on October 22, 2001 and Reply Comments on November 8, 2001, explaining why the 1910-1930 MHz band should not be allocated for advanced mobile or other high power services such as MDS. For convenience, NEC attaches a copy of its Comments and Reply Comments to this filing.

4/ *See* Infotech, *The Wireless Business Connection* (First Quarter 2001 Report) 123; *Amendment of the Commission's Rules to Establish New Personal Communications Services*, Second Report and Order, 8 FCC Rcd 7700, 7738 (¶ 88) (1993).

5/ *See* Infotech, *The Wireless Business Connection* (Fourth Quarter 2001 Report). NEC notes that the number of equipment authorizations for UPCS devices (45 as of last year) provides no indication that the 1920 – 1930 MHz UPCS band is "lightly used," despite such characterization in

comprised, at 30.6%, the largest category of new users in the enterprise wireless communications market. 6/

Use of UPCS is especially heavy in the healthcare industry. In fact, some forty percent of the users of NEC's wireless PBX work in hospitals or other healthcare facilities. NEC's PBX solution – which provides interference-free, wireline sound quality – is ideally suited for healthcare settings, where clarity of communications can be critical. NEC handsets have replaced traditional pagers for many emergency room doctors, operating room prep teams, and nurses. Additionally, the system offers a short text-messaging service, providing a powerful way to exchange critical patient information or, combined with medical telemetry, to permit the remote reading of a patient's vital statistics.

The FCC has determined that the public safety is implicated by communications systems used by hospitals, 7/ and has recognized the importance of avoiding disruptive relocations to such systems. 8/ Given healthcare workers' reliance on UPCS, it would be sadly ironic if, in the name of promoting public safety, the FCC were to establish rules in this proceeding that in fact made it more

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the 3G NPRM. Manufacturers may produce unlimited quantities of a device based on a single equipment authorization.

6/ *Id.*

7 *See Amendment of Part 90 of the Commission's Rules to Create the Emergency Medical Radio Service*, Report and Order, 8 FCC Rcd 1454, 1459 (1993); *Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service*, Report and Order, 15 FCC Rcd 11206, 11209 (¶ 11) (2000) (allocating exclusive spectrum for medical telemetry and justifying exception to flexible allocation policy in order "to protect the public safety").

8 *See Miami Valley Hospital*, et al., Order, 14 FCC Rcd 7043 (¶ 15) (WTB 1999)(finding that waiving the relocation of hospital paging systems "serves the public interest because the hospitals' migration to other paging frequencies would pose unnecessary risks to essential medical paging

difficult for public safety personnel in the healthcare system to perform their jobs effectively.

II. Introducing High Power Services Into the 1910-1930 MHz Band Is Not Technically Feasible, as It Would Cause Interference to UPCS and Neighboring PCS Licensees

UPCS systems cannot share a band with high power operations such as cellular-type SMR. The listen-before-talk spectrum etiquette required by the FCC's rules for UPCS devices means that any interference from other operations would effectively silence the UPCS systems. 9/ A reallocation of 1910-1930 MHz to allow SMR, then, is tantamount to a relocation of UPCS users. Given that equipment costs for UPCS systems average over $1,000 per user, and that there are hundreds of thousands of existing users, equipment replacement costs could run into the hundreds of millions of dollars. Moreover, no high power service would be able to operate across the full 20 MHz of the 1910-1930 MHz band without causing harmful interference to neighboring PCS operations. 10/ Guard bands equal to one-half of the entire band – *i.e.,* 5 MHz on each edge of the band – would likely be needed to protect PCS licensees.

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communications . . . .").

9/ *See* 47 C.F.R. § 15.323(c). Currently, coordination is normally used to prevent UPCS interference, but a mobile service such as cellular-type SMR cannot be coordinated with fixed UPCS installation sites.

10/ In its 3G Proceeding comments, Motorola provided a detailed engineering analysis illustrating that sharing the 1910-1930 MHz band between UPCS and high-power operations is not technically feasible. *See* Motorola 3G Proceeding Comments at 18-19, Appendix A. Other participants in the proceeding made similar comments. *See* Verizon Wireless Comments at 9-10; ArrayComm Comments at 7; Avaya Comments at 10; CTIA Comments at 3; Cingular Comments at 12-13; UTStarcom Comments at 4; WINForum Comments at 9-10.

III. Relocation of SMR into the 1910 – 1930 MHz Band Would Represent Inefficient Spectrum Management

As currently allocated, the 1910 – 1930 MHz band is an example of good spectrum management. The band serves two purposes: it protects neighboring PCS licensees from harmful interference while at the same time permitting the development of a new and exciting industry that provides interference-free wireless communications for public safety and other enterprise users. This "dual use" of the band is possible because UPCS is a low power service. Any attempt to squeeze a high power service such as SMR into the band would require wide guard bands to protect neighboring PCS users, thereby negating the spectral efficiencies of the current allocation.

IV. Spectrum Efficiency Can Be Further Improved by Adoption of the WINForum and UTStarcom Proposals

As NEC noted in its 3G Proceeding comments, UPCS system providers are already experiencing capacity limitations in certain existing and potential customer deployments, especially for the provisioning of service to high-density users and in multi-tenant buildings. 11/ By approving two pending petitions, the Commission can ameliorate this location-specific band crowding and simultaneously improve the efficient use of spectrum in the 1910 – 1920 MHz band, which is currently limited to asynchronous operations that are technically unsuited for voice communications.

11/ In the 3G Proceeding, s*ee* Nortel Networks Comments at 4; UTAM Comments at 13; NEC Comments at 25; Avaya Comments at 5.

First, the Commission should grant the WINForum petition 12/ to permit voice-friendly isochronous operations in the 1910-1920 MHz band. As a second step, the Commission should adopt, with minor changes to accommodate co-existence with current UTAM rules, UTStarcom's proposal to permit low power, unlicensed limited area "community wireless networks" that will promote the cost effective provision of wireless communications to rural areas, tribal lands and other underserved communities. 13/ The grant of the WINForum and UTStarcom proposals, with minor amendments, would do more to enhance to the efficient use of the 1910-1930 MHz band than any SMR reallocation that likely would require at least 10 MHz of fallow guard band spectrum.

V. Conclusion

The Commission should not reallocate the 1910-1930 MHz band as relocation spectrum for cellular-type SMR operations. Such high power use of the band would be inappropriate in view of the documented success of UPCS and the significant number of health care facilities that use UPCS equipment. A reallocation of the 1910 – 1930 MHz band for SMR operations would require substantial guard bands to protect neighboring PCS licensees, thereby resulting in a grossly inefficient use of spectrum. Moreover, SMR operations in the band would require the relocation of hundreds of thousands of existing UPCS users, resulting in hundreds of millions of

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12/ Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service, RM-9498 (Jan. 8, 1999).

13/ Petition for Rule Making of UTStarcom, Inc., Concerning the Unlicensed Personal Communications Service, RM-10024 (Nov. 6, 2000). UTAM is the frequency coordinator for the UPCS

dollars in UPCS equipment replacement costs. Instead, the Commission should maintain the current allocation for UPCS devices, but make minor amendments to the operational rules to permit greater and more flexible use of the UPCS band, as suggested in prior petitions filed by WINForum and UTStarcom.

Respectfully submitted,

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bands.